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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,385	01/26/2005	Shinya Nakaoka	P70376US0	8004

136 7590 06/23/2006

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WASHINGTON, DC 20004

EXAMINER
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LEE, GILBERT Y

ART UNIT	PAPER NUMBER
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3673

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/522,385

Applicant(s)

NAKAOKA ET AL.

Examiner

Gilbert Y. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/29/05, 12/1/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the fitting surface being perpendicular to an axis of said seal ring in claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. For the purposes of this, examination, the examiner is interpreting the claim as to mean that the fitting surfaces are radially spaced from the axis of the sealing ring.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

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consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 1-10 are objected to because of the following informalities: All independent claims must start with "A" and all dependent claims must start with "The". Appropriate correction is required.

4. Claim 1 is objected to because of the following informalities: "a seal ring" in line 13. It is unclear to the examiner whether the applicant is trying to claim two separate seal rings or a single seal ring. For the purposes of this examination, the examiner is interpreting the claim to mean "the seal ring" (meaning a single seal ring). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

b. Claim 2 recites "regions which are placed one over the other...in the diametric direction". It is unclear to the examiner as how the linear contact portions will be placed one over the other if one is on the inner sealing surface and one is on the outer sealing surface.

c. The term "substantially mountain shaped portion" in claim 4 is a relative term which renders the claim indefinite. The term "substantially mountain shaped portion" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

d. Claim 5 recites "assembled so as to rotate...end parts of said separation portion." It is unclear to the examiner as to what the applicant is claiming. For

the purposes of this examination, the examiner is interpreting the claims to be claiming that the one member is capable of rotating when assembled.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kakehi et al. (US Patent No. 5,934,680).

Regarding claim 1, the Kakehi et al. reference discloses a seal ring (50) including a first seal portion (e.g. 54) sealing a side wall surface (e.g. 90) of an annular groove (Fig. 25B), the annular groove being provided in one of two members (Figs. 25A and 25B); and

a second seal portion (e.g. 55);

wherein an annular interspace between the two members is sealed by the seal portions (Col. 1, Lines 30-36); and

a ring body of the seal ring being provided with a separation portion (Figs. 13A and 13B) which is separated in one place in a circumferential direction of the sealing ring (Fig. 16);

the seal ring characterized in that said first seal portion is provided with linear contact portions (e.g. 54) which come into linear contact with the sidewall surface of the

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annular groove, so as to extend continuously over a whole circumference of the seal ring from one side of said separation portion to the other side thereof (Fig. 16); and

that said linear contact portion which is provided on one side of said separation portion, and said linear contact portion which is provided on the other side of said separation portion are located at a distance in a diametric direction of the seal ring (Fig. 16).

Regarding claim 2, the Kakehi et al. reference discloses the linear contact portions being placed one over the other when said linear contact portions are projected in the diametric direction (Fig. 16).

Regarding claim 3, the scope of the claim is a functional limitation and the Kakehi et al. reference as modified discloses the invention substantially as claimed in claim 1, therefore it is inherent that the Kakehi et al. reference as modified would be able to function in the same manner as the applicant's invention.

Regarding claim 4, the Kakehi et al. reference discloses the linear contact portions defining substantially mountain shaped portion shaped portions protruding from a side surface of the ring body, toward the sidewall surface of the annular groove (Figs. 13A and 13B).

Regarding claim 5, the Kakehi et al. reference discloses the linear contact portion provided on one side of the separation portion being located nearer a side of the other member than the linear contact portion provided on the other side of the separation portion (Fig. 16); and the said one member being able to rotate (Col. 1, Lines 30-36).

Regarding claim 6, the Kakehi et al. reference discloses circularly-arcuate protrusive parts (e.g. 17) and circularly-arcuate recessed parts (e.g. recesses into which elements 17 are inserted in Fig. 16).

Regarding claim 10, the Kakehi et al. reference discloses the linear contact portions including:

a first linear contact portion (e.g. portion on left abutment 16 in Fig. 16) and a second linear contact portion (e.g. portion on right abutment 16 in Fig. 16).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakehi et al. in view of Ruthenburg (US Patent No. 3,784,215)

Regarding claims 7 and 8, the Kakehi et al. reference discloses the invention substantially as claimed in claims 6 and 1, including circularly-arcuate protrusive parts (e.g. 17) and circularly-arcuate recessed parts (e.g. recesses into which elements 17 are inserted in Fig. 16).

However, the Kakehi et al. reference fails to explicitly disclose protrusions which come into linear contact with the fitting surfaces.



The Ruthenburg reference, an annular split sealing ring, discloses protrusions (e.g. 56 and 58) in linear contact with the fitting surfaces (e.g. 48).

It would have been obvious to one of ordinary skill in the art to provide protrusions to the Kakehi et al. reference in view of the teachings of the Ruthenburg reference in order to provide a circumferential constraint against the opening of the split sealing ring when the ring is in a free position (Ruthenburg, Col. 1, Lines 55-59).

Regarding claim 9, the Kakehi et al. reference, as modified in claim 8, discloses the fitting surfaces being radially spaced from the axis of the sealing ring (Kakehi et al., Fig. 16).

### ***Conclusion***

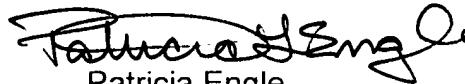
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Roberts et al. (US Patent No. 6,685,193) which discloses one face with a continuous linear contact portion.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gilbert Y. Lee whose telephone number is 571-272-5894. The examiner can normally be reached on 8:00 - 4:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia L. Engle can be reached on (571)272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Patricia Engle", is positioned above the printed name.

Patricia Engle  
SPE  
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GL  
6/19/06